
MYCOTAXON

<http://dx.doi.org/10.5248/128.179>

Volume 128, pp. 179–183

April–June 2014

***Australohydnum dregeanum* new to Italy**ALESSANDRO SAITTA*, MARIA LETIZIA GARGANO,
RICCARDO COMPAGNO, & GIUSEPPE VENTURELLA*Department of Agricultural and Forest Sciences, University of Palermo,
Viale delle Scienze 11, I-90128 Palermo (Italy)** CORRESPONDENCE TO: alessandro.saitta@unipa.it

ABSTRACT — We report on the first finding in Italy (and the third in Europe) of *Australohydnum dregeanum*. A detailed description of the macro- and micromorphological features, the ecological data, and some taxonomic remarks concerning this taxon are provided. The bluish tint in the centre of the hymenophoral surface and the non-cystidiform aspect of the marginal hyphae are previously undescribed characters.

KEY WORDS — *Corticaceae*, *Phanerochaetaceae*, wood-inhabiting fungi, urban biodiversity

Introduction

Wood decay fungi are widely distributed in forest ecosystems of Italy. Their importance is highlighted by the fundamental role they play in the decomposition of woody debris (Saitta et al. 2011) and by the high level of diversity reported from broad-leaved and conifer woods (Venturella et al. 2011). Although in recent years the mycological exploration in forest ecosystems of Italy has definitely increased, it is still possible to find infrequent and/or rare lignicolous species growing as saprotrophs or parasites on fallen trunks, branches, stumps, etc. (Saitta & Melo 2012). Such is the case with *Australohydnum dregeanum*, recently collected and identified as new to Italy (a third record from Europe).

Three species are included in *Australohydnum* Jülich (*Phanerochaetaceae*): *A. castaneum*, *A. dregeanum*, and *A. griseofuscenscens*; we follow here the synonymy outlined by Melo & Hjortstam (2002), which treats *A. dregeanum* and *A. griseofuscenscens* as conspecific.

Materials & methods

The basidiomata were collected inside the “Parco della Favorita”, belonging to the Natural Reserve of “Monte Pellegrino”, a wide green area within the city of Palermo

(Sicily). The macroscopic identification was carried out on fresh basidiomata while the microscopic features were observed under a Leica microscope DMLB on dried specimens using a 0.3% KOH solution and cotton blue in lactic acid. The spore measurements were based on 50 observations carried out on fresh and dried basidiomata. The nomenclature follows MycoBank (<http://www.mycobank.org>), and the description of *A. dregeanum* is based on the authors' observation of the collected basidiomata. The specimens (SAF 001, SAF 002) are kept in the fungal dried reference collection of the mycological herbarium (under establishment) of the new Department of Agricultural and Forest Sciences (activated by the University of Palermo on 2014).

Taxonomy

Australohydnum dregeanum (Berk.) Hjortstam & Ryvarden,

Syn. Fung. 4: 61. 1990.

PL. 1

≡ *Corticium dregeanum* Berk., London J. Bot. 5: 3. 1846.

≡ *Lopharia dregeana* (Berk.) P.H.B. Talbot, Bothalia 6: 57. 1951.

= *Hydnum griseofuscescens* Reichardt, Verh. Zool.-Bot. Ges. Wien 16: 374. 1866.

≡ *Austrohydnum griseofuscescens* (Reichardt) Jülich, Persoonia 10: 138. 1978.

= *Irpex vellereus* Berk. & Broome, J. Linn. Soc., Bot. 14: 61. 1873.

≡ *Oxyporus vellereus* (Berk. & Broome) A. Roy & A.B.

De, J. Mycopathol. Res. 36: 41. 1998.

= *Irpex purpureus* Yasuda ex Lloyd, Mycological Notes 50: 715. 1917.

Basidiomata annual, resupinate to effuse-reflexed, forming patches up to 5 cm wide, and laterally confluent and effused ≤15 cm, cracked when dried. The hymenial surface is bluish in the center when fresh, gradually lilac to the margin; brownish when dried, with some areas soft lilac; more or less warted, warts ≤2.5 mm long, differently anastomosed. Margin evident, sterile, distinctly white, slightly tomentose ≤4 mm broad. The basidiomata can be easily separated from the substrate only when dried. Flesh thin, white.

Hyphal system pseudodimitic. Hyphae simple septate. Hymenial hyphae prevalently thin-walled. Subicular hyphae thick-walled, 4–5.5 µm wide. Marginal hyphae 4–5 µm wide, hyaline, more or less thick-walled, frequently branched, sometimes encrusted at the apex. Basidia hyaline, (22–)25–35(–40) µm long, sinuous-clavate, simple septate at the base, with sterigmata 3.5–4.5 µm long. Spores (4.5–)4.8–5.3(–5.8) 2.5–2.8(–3.2) µm, ellipsoid, hyaline, smooth, thin-walled, inamyloid, cyanophilous. Skeletocystidia very abundant, cylindrical ≤125 µm long and 4.5–6.5(–7) wide, apices obtuse, more or less encrusted, originating from pseudoskeletal hyphae and rarely projecting beyond the hymenium ≤15 µm, incrustated part 25–45 µm.

SPECIMENS EXAMINED: ITALY, SICILY, PALERMO, Parco della Favorita, 38.15457°N 13.34628°E, 44 m a.s.l., Mediterranean maquis with scattered plants of *Eucalyptus sideroxylon* A. Cunn. ex Woolls, on fallen trunk of *E. sideroxylon*, 4 Apr 2012, coll. A. Saitta (SAF 001); 5 Oct 2012, coll. A. Saitta (SAF 002).

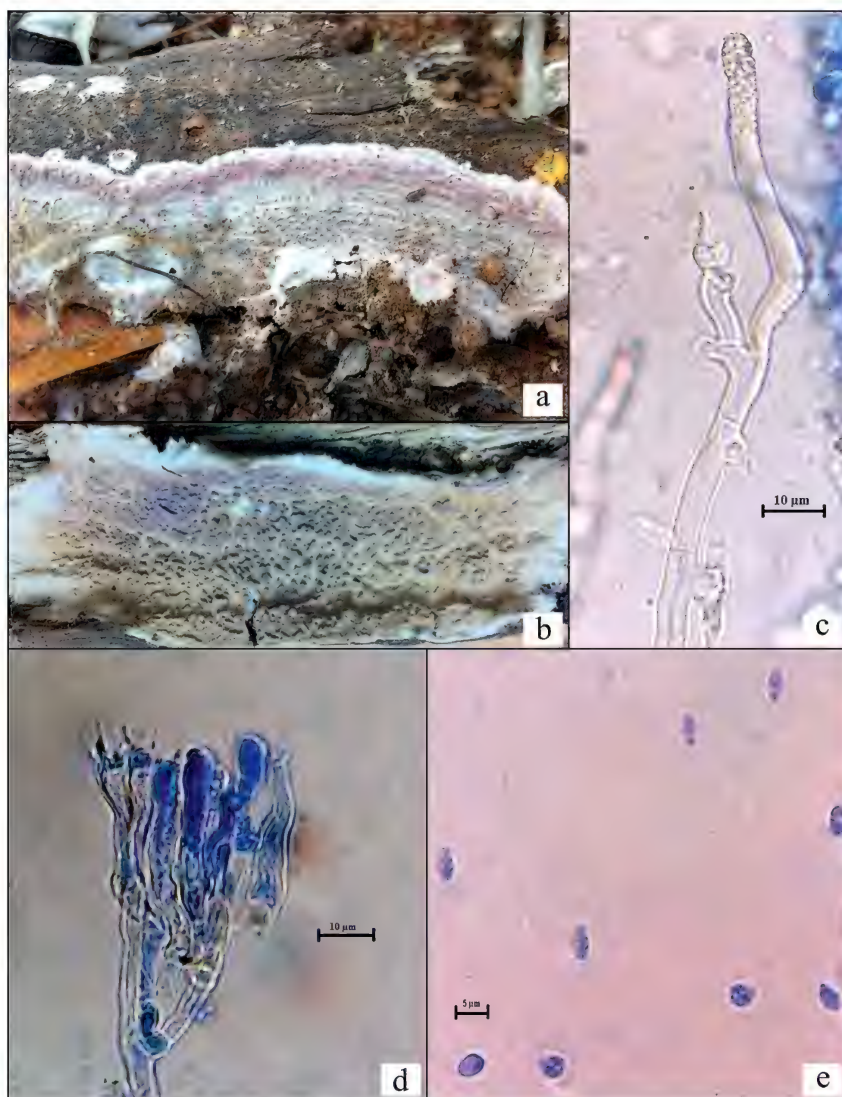


PLATE 1. *Australohydnum dregeanum* (SAF 002). a) Fresh basidioma; b) Dried basidioma; c) Skeletocystidium; d) Basidia; e) Spores.

Discussion

Australohydnum dregeanum was collected on fallen trunk of *E. sideroxylon* in the clearings of a Mediterranean maquis. The vegetation is also characterized

by scattered plants and shrubs of *Quercus ilex* L., *Ulmus minor* Mill., and *Pistacia lentiscus* L. mixed with conifers, *Cedrus atlantica* (Endl.) Manetti ex Carrière, *C. deodara* (Roxb. ex D. Don) G. Don, and *Cupressus sempervirens* L.

Eucalyptus sideroxylon was introduced in reforestation approximately 60 years ago, when the local Department of Forestry began an intense planting of exotic species on the Sicilian territory. *Eucalyptus* wood is a new substrate, and the Mediterranean maquis is a new habitat for *A. dregeanum* in Europe. Melo & Hjortstam (2002) reported *A. dregeanum* on fallen branches of *Olea europaea* L. var. *europaea* in a holm oak forest (*Quercus rotundifolia* Lam.) with a small abandoned olive grove and lusitanic oaks (*Q. faginea* Lam.).

Owing to the presence of abundant encrusted skeletocystidia and simple septate generative hyphae, *A. dregeanum* is rather easily identified. The morphological features of the *A. dregeanum* collected in Sicily are similar to those reported by Melo & Hjortstam (2002) for specimens collected in Portugal. The main difference in the features of the Sicilian specimens are the bluish tint in the centre of hymenophoral surface (not reported in any previous description) and the non-cystidiform aspect of the marginal hyphae. The bluish tint in the centre of hymenophoral surface is clearly visible in the fresh specimens.

The genus *Australohydnum* in Europe includes only one taxon, *A. dregeanum*, which was collected in Portugal by Melo & Hjortstam (2002) as new to Europe. The species is also known from Australia (Reichardt 1866, as *Hydnum griseofuscescens*; Reid 1956, as *Irpex vellereus*), New Zealand (Buchanan & Ryvarden 2000), Japan (Lloyd 1917, as *Irpex purpureus*), South Korea (Lim et al. 2005), Sri Lanka (Berkeley & Broome 1873, as *Corticium dregeanum*), India (De 1998, as *Oxyporus vellereus*; Tiwari et al. 2010], South Africa (Berkeley 1846, as *Corticium dregeanum*; Talbot 1951, as *Lopharia dregeana*), Israel (Tura et al. 2010), and Russia (Zmitrovich et al. 2006).

Lim & Jungh (2003) described a new species, *Irpex hydnoides* Y.W. Lim & H.S. Jung, microscopically quite similar to *A. dregeanum* but which has a different hymenophoral configuration. Their analyses did not place *Irpex vellereus* within the *I. hydnoides*–*I. lacteus* clade but grouped it instead (with 100% support) with a sequence of *A. dregeanum*, supporting the synonymy of *A. dregeanum* and *I. vellereus*. Their *A. dregeanum*–*I. vellereus* clade was sister to the group that included members of the genus *Phanerochaete*.

The presence of *A. dregeanum* in Italy is noteworthy, considering its fragmented European distribution. This new finding also supports Sicily as a “hot spot” of biodiversity for aphylloporoid fungi (Saitta et al. 2011).

Acknowledgments

The authors wish to thank Dr. Ireneia Melo (Portugal) and Dr. Georgios I. Zervakis (Greece) for kindly revising the manuscript. Thanks are also due to Dr. Shaun Pennycook

(New Zealand) for nomenclatural review and Dr. Cristiano Losi for critical comments provided.

Literature cited

- Berkeley MJ. 1846. Decades of fungi. Decade XI. London Journal of Botany 5: 1-6.
- Berkeley MJ, Broome CE. 1873. Enumeration of fungi of Ceylon. Part II., containing the remainder of the *Hymenomyces*, with the remaining established tribes of Fungi. J. Linn. Soc. Bot. 14: 29-140. <http://dx.doi.org/10.1111/j.1095-8339.1873.tb00301.x>
- Buchanan PK, Ryvarden L. 2000. An annotated checklist of polypore and polypore-like fungi recorded from New Zealand. New Zeal. J. Bot. 38: 265-323. <http://dx.doi.org/10.1080/0028825X.2000.9512683>
- De AB. 1998. Taxonomy of *Oxyporus vellereus* comb. nov. J. Mycopathol. Res. 36(1): 41-44.
- Lim YW, Jung HS. 2003. *Irpex hydroides*, sp. nov. is new to science, based on morphological, cultural and molecular characters. Mycologia 95(4): 694-699. <http://dx.doi.org/10.2307/3761945>
- Lim YW, Lee JS, Kim HY, Jung HS. 2005. Wood rotting fungal flora of Kanghwa Island. Mycobiology 33(4): 167-172. <http://dx.doi.org/10.4489/MYCO.2005.33.4.167>
- Lloyd CG. 1917. Rare or interesting fungi received from correspondents. Mycol. Writ. 5: 706-716.
- Melo I, Hjortstam K. 2002. *Australohydnum dregeanum* (Basidiomycetes, Stereaceae) in Europe. Nova Hedwigia 74(3-4): 527-532. <http://dx.doi.org/10.1127/0029-5035/2002/0074-0527>
- Reichardt HW. 1866. Diagnosen der neuen Arten von Pilzen welche die Novara-Expedition mitbrachte. Verh. Zool. Bot. Ges. Wien 16: 373-376.
- Reid DA. 1956. New or interesting records of Australasian *Basidiomycetes*. Kew Bull. 1955: 631-648. <http://dx.doi.org/10.2307/4113780>
- Saitta A, Melo I. 2012. *Steccherinum straminellum*, a new record for Italy. Mycotaxon 121: 281-284. <http://dx.doi.org/10.5248/121.281>
- Saitta A, Bernicchia A, Gorjón SP, Altobelli E, Granito VM, Losi C, Lunghini D, Maggi O, Medardi G, Padovan F, Pecoraro L, Vizzini A, Persiani AM. 2011. Biodiversity of wood-decay fungi in Italy. Plant Biosystems 145(4): 958-968. <http://dx.doi.org/10.1080/11263504.2011.633114>
- Talbot PHB. 1951. Studies of some South African resupinate *Hymenomyces*. Bothalia 6(1): 1-116.
- Tiwari CK, Parihar J, Verma RK. 2010. Additions to wood decaying fungi of India. Journal of Threatened Taxa 2(6): 970-973. <http://dx.doi.org/10.11609/JoTT.o2214.970-3>
- Tura D, Zmitrovich IV, Wasser SP, Nevo E. 2010. Checklist of *Hymenomyces* (*Aphylophorales* s.l.) and *Heterobasidiomycetes* in Israel. Mycobiology 38(4): 256-273. <http://dx.doi.org/10.4489/MYCO.2010.38.4.256>
- Venturella G, Altobelli E, Bernicchia A, Di Piazza S, Donnini D, Gargano ML, Gorjón SP, Granito VM, Lantieri A, Lunghini D, Montemartini A, Padovan F, Pavarino M, Pecoraro L, Perini C, Rana G, Ripa C, Salerno E, Savino E, Tomei PE, Vizzini A, Zambonelli A, Zotti M. 2011. Fungal biodiversity and *in situ* conservation in Italy. Plant Biosystems 145(4): 950-957. <http://dx.doi.org/10.1080/11263504.2011.633115>
- Zmitrovich IV, Malysheva VF, Spirin WA. 2006. A new morphological arrangement of the *Polyporales*. I. *Phanerochaetinae*. Mycena 6: 4-56.